IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: David B. Wallace
Serial No: 10/085,396 Examiner: Hartman Jr., R.
Filed: 02/28/2002 Group Art Unit: 2121
For: BULK INVENTORY NETWORK SYSTEM
Commissioner for Patents
Alexandria, VA 22313

Sir:

AFFIDAVIT OF DAVID B. WALLACE UNDER 37 C.F.R. 1.131

I, David B. Wallace, the sole inventor named in the above-identified patent application ("the'397 application") state as follows:

1. All of the events outlined below occurred in the United States of America.
2. Prior to April 22, 1996, I invented a system for a transportation carrier to maintain sufficient quantities of dry bulk materials at a remote manufacturing site. This embodiment of my invention includes generating a first signal representative of an existing dry bulk material quantity at a remote site. The system also includes transmitting a second signal corresponding to a first signal, from a remote site to at least one of a local computer and a central computer at predetermined time intervals. The system determines the existing dry bulk material quantity and projected material usage rate for the existing dry bulk material quantity based on these transmitted signals. The system then orders additional dry bulk materials from a preselected vendor based on the existing material quantity and the projected material usage rate. The system includes providing a transport vehicle to deliver the additional dry bulk material from a preselected vendor to the manufacturing site. The additional dry bulk

material is transported from the preselected vendor to the manufacturing site. The system ensures that the additional dry bulk material is supplied to the manufacturing site before the existing dry bulk material is depleted.

3. Prior to April 22, 1996, I invented a system for a transportation carrier to maintain sufficient quantities of dry bulk materials at a remote manufacturing site which produces at least one of an audible and a visual alarm, via a central computer, if the material level falls below a predetermined level. This embodiment of my invention includes generating a first signal representative of an existing dry bulk material quantity at a remote site. The system also includes transmitting a second signal corresponding to the first signal, from a remote site to at least one of a local computer and a central computer at predetermined time intervals. The system determines the existing dry bulk material quantity and projected material usage rate for the existing dry bulk material quantity based on these transmitted signals. The system then orders additional dry bulk materials from a preselected vendor based on the existing material quantity and the projected material usage rate. The system includes providing a transport vehicle to deliver the additional dry bulk material from the preselected vendor to the manufacturing site. The additional dry bulk material is transported from the preselected vendor to the manufacturing site. The system ensures that the additional dry bulk material is supplied to the manufacturing site before the existing dry bulk material is depleted and produces at least one of an audible and a visual alarm, via the central computer, if the material level falls below a predetermined level.

4. Prior to April 22, 1996, I also invented a system for a transportation carrier to maintain sufficient quantities of dry bulk materials at the remote manufacturing site that includes generating a first signal representative of

an existing dry bulk material quantity at a remote site using one of an ultrasonic and a strain gauge detector to generate the first signal. The system then transmits a second signal corresponding to the first signal, from the remote site to at least one of a local computer and a central computer at predetermined time intervals and determines the existing dry bulk material quantity and projected material usage rate for the existing dry bulk material quantity based on these transmitted signals. The system orderes additional dry bulk materials from a preselected vendor based on the existing material quantity and the projected material usage rate and provides a transport vehicle to deliver and transport the additional dry bulk material from the preselected vendor to the manufacturing site. The system suppies the additional dry bulk material to the manufacturing site before the existing dry bulk material is depleted.

5. I am currently employed by J.P. Donmoyer, Inc., of Ono, Pennsylvania, as Director of Marketing and Sales.

6. I was Director of Marketing and Sales at J.P. Donmoyer, Inc., at the time of the conception of my invention.

7. I am not trained as an engineer, nor do I possess any special education or background in any of the engineering or scientific arts.

8. As a consequence of my lack of the engineering skill necessary to pursue my invention, it has been necessary for me to seek the advice and assistance of companies and individuals that specialize in the design and manufacture of inventory level systems in order to both memorialize my conception of the invention and to reduce it to practice.

9. As a part of my on-going, diligent efforts to reduce my invention to practice, I compiled a list of major companies who specialized in inventory leveling systems, via the internet and industry trade journals. I made numerous contacts via telephone to discuss my conception of a system

and method for a transportation carrier to maintain a sufficient quantity of raw materials at a remote site, and to seek engineering support for the design of such a system according to my conception and related functional specification.

a. Companies contacted included:

Celteck of New Orleans, LA

Bin-Master of Lincoln NE

Monitor Manufacturing

Apptech Engineered Systems of Plumsteadville, PA

Magyar Associates, Allentown, PA.

10. Each of the foregoing companies were provided with a verbal disclosure of an embodiment of my invention including at least a system for monitoring a dry bulk material quantity at a remote site comprising a detector for producing a first output signal corresponding to an existing material quantity; a remote telemetry unit for receiving the first output signal from the detector and producing a second output signal corresponding to the first output signal; and a computer coupled to the remote telemetry unit for receiving the second output signal from the remote telemetry unit, the computer including software for determining the existing material quantity and a projected usage rate for the existing material quantity based on the second output signal.

11. On or about February 9, 1996, Fred Coffey of Apptech Engineered Systems reviewed my conception of a system and method for a transportation carrier to maintain a sufficient quantity of raw materials at a remote site. Fred, on the basis of this discussion, stated that it would be possible to design such a system according to my requirements.

12. Attached as Exhibit A is a copy of a note from Fred Coffey, dated February 9, 1996, providing a quote for a plumb bob unit as well as a

confirmation of his follow up to obtain data flow from each silo-based unit back to our central computer in accordance with the conception of my invention verbally expressed to him during our telephone conversation.

13. On or about February 12, 1996, Fred Coffey discussed options for using Apptech Engineered Systems' plumb bob system in such a manner to provide the ability to receive updates from multiple silo-based units back to a central computer. Fred thought that Apptech Engineered Systems could design a "black box" for each site which could work on a modem line. However, Apptech Engineered Systems had not done this at this point and a special technician would have to be assigned.

14. Attached as Exhibit B is a copy of a facsimile note from Fred Coffey, dated February 12, 1996, memorializing the conversation referred to in paragraph 16.

15. On or about February 20, 1996, Steve Adams, Product Manager, BIN Master, Lincoln, NE contacted Frank Constanzo, General Manager of J. P. Donmoyer to discuss the invention.

16. Attached as Exhibit C is a copy of a follow-up letter from Steve Adams, dated February 20, 1996, to confirm conversation details as well as to provide a preliminary sketch of a proposed embodiment of my inventory monitoring system as discussed during the telephone conversation. Steve's letter represents factual evidence of my conception of the complete invention prior to April 22, 1996, in the form of a diagrammatic sketch and explanatory letter.

17. On or about March 7, 1996, Steve Adams of BIN Master conducted a sales call at J.P. Donmoyer, in Ono, PA, to provide a product demonstration of his product, the Smart Bob. Steve discussed the use of the Smart Bob as a detector for producing a first output signal corresponding to an existing material quantity in a storage bin or vessel.

18. Attached as Exhibit D are copies of follow-up letters from Steve Adams, dated March 8th and 19th, 1996, to confirm details of the presentation held on 7th March.

19. On or about March 28, 1996, Peter Wells of Apptech Engineered Systems, conducted a sales presentation at J.P. Donmoyer. Peter Wells was the technical representative working at the direction of Fred Coffey. (See paragraphs 13-17 above). Peter presented a potential embodiment of my invention incorporating a "black box" to operate as a remote telemetry unit. This devise would transmit data, via modem, to any source chosen via a phone line.

20. Attached as Exhibit E is a copy of a follow-up letter from Peter Wells, dated April 8, 1996, to confirm conversation details and issues raised during his presentation of March 28, 1996.

21. On or about May 30, 1996, Mike Karpa of Magyar Associates made a sales call at J.P. Donmoyer in Ono, PA. Mike Karpa is a manufacturer's representative for Kistler Morse, and is employed by Magyar Associates. Mike presented various types of leveling systems as well as options to retrieve data from a site and transmit that data back to a central computer where the data could be displayed for the logistical purpose of consistent product replenishment in accordance with the conception of my invention. Mike advised he had experience with a private engineering company, Tri-Star, Inc., who would have the ability to design the complete system to link into either a Kistler Ultra Sonic and/or Kistler load cell detector. Mike agreed to arrange a meeting with Tri-Star.

22. Attached as Exhibit F is an Affidavit from Michael Karpa verifying his involvement in the reduction to practice of my invention.

23. On or about June 10, 1996, a second meeting was held at J.P. Donmoyer in Ono, PA including the same individuals as the May 20, 1996 meeting,

and also including Walter Maidl, Vice President Sales, Allen Baumbach II, Project Engineer, Tri-Star, Inc., Middletown, PA . The preferred embodiment of my invention was discussed in detail. Tri-Star agreed to produce a working remote telemetry unit (RTU) to be installed at a customer site for an experimental use of my invention. The RTU would be able to take a standard 4/20 ma read based on preprogrammed times and transmit that data, via phone line, with no restrictions on distance. A modified SCADA program would be installed in a computer at J.P. Donmoyer which would translate the data in a historical trend analysis, and provide comparisons of variable flow rate changes. Maidl was instructed by me on behalf of J.P. Donmoyer to provide a formal proposal and quote for the project.

24. On or about June 12, 1996, Mike Karpa of Magyar Associates and Walt Maidl visited the Pennsylvania Steel Technologies (PST) facilities located at Steelton, Pennsylvania, to verify the availability of existing 4-20 line for the purpose of installing a prototype embodiment of my invention for test ("the PST project"). It was determined that there was a need to run 50 yards of phone line to make on-site modem connection.

25. On or about July 3, 1996, Tri-Star Inc., provided a proposal detailing the installation of a Bulk Inventory Network System (BINS) in accordance with my invention for the PST project at Bethlehem Steel.

26. Attached as Exhibit G is a copy of Tri-Star Inc.'s proposal dated July 03, 1996, and follow-up letters dated July 15th, August 5th, and August 6th, detailing the installation of a Bulk Inventory Network System (BINS) in accordance with my invention.

27. On or about July 12, 1996, I received a formal quote from Tri-Star for an I/O Operating System to be used in connection with my invention. Tri-Star

agreed to purchase the I/O Operating System from Control Micro Systems, via Mike Karpa.

28. On or about August 1, 1996, I had a conversation with Tim Miller of Kimmel Coal Services, Wiconisco, PA. Tim was aware of the PST project. I stated to Tim that PST would like to see his injection carbon levels handled in the same manner. Tim expressed interest to allow me to test multiple silos at the PST site. The same was reviewed with Allen Baumbach of Tri-Star and Mike Karpa of Magyar.

29. On or about August 27, 1996, I raised concerns over delivery delays of required components. Tri-Star stated that reasons for delay on the PST project included:(i) the VS/2 had not shipped yet, and (ii) the PST site also required modem activation. I contacted Mike Karpa to request a push of his people. Mike provided a September 26th delivery date.

30. On or about October 13, 1996, JP Donmoyer personnel, including myself, made a presentation to PST, Steelton. The experiments associated with reduction to practice of the invention were detailed. The PST Project would be under my direct control so that I could monitor and direct the efforts toward perfecting the invention's essential qualities. The project was estimated to be completed and functioning on site within thirty days. Robert Siddall assigned John Martz an electronics technician for PST to install the required signal line. Attendees at the meeting included: Robert Siddall of PST, John Martz of PST, Joe Hahn of PST, Anthony Mantione of Pennsylvania Lime, Inc., David Wallace of JP Donmoyer, Frank Costanzo of JP Donmoyer and Mike Egbert of JP Donmoyer.

31. Attached as Exhibits H, I, and J are the Affidavits of Robert Siddall of PST, John Martz of PST, and Anthony Mantione of Pennsylvania Lime, Inc., in support of the foregoing factual evidence of diligent work towards a

reduction to practice of my invention and the undertaking of an experimental installation at PST.

32. On or about October 28, 1996, John Martz of PST Steelton advised me that the Kistler Morse microcells had arrived at the Steelton site. Allen Baumbach of Tri-Star was notified to install them.

33. On or about November 15, 1996, a commitment by Allen Baumbach was received that the system would be installed at PST Steelton by the following week.

34. On or about December 12, 1996, Tri-Star moved on site at PST Steelton, and the installation of an experimental embodiment of my invention was begun. Additional training issues with the software were encountered at that time.

35. On or about December 30, 1996, the system had been functioning at PST Steelton on a limited basis, and not according to expected results. The modem appeared to be hanging up and not closing, with future reads of data not being obtained. Tri-Star advised that the signal line could be the source of the problems. Considerable disagreement occurred among the parties involved as to why the system of my invention was not functioning properly. Tri-Star agreed to attempt multiple solutions to correct the problems.

36. On or about January 14, 1997, Tri-Star could not resolve the modem problem with the unit installed at that time. Tri-Star advised me that the problems were not resulting from their installation nor of their programming. Tri-Star advised that it must be a problem with the hardware which should all be replaced. In addition to the modem issues, the time on the computer installed and programmed by Tri-Star was displaying incorrect times.

37. On or about January 27, 1997, another complete replacement unit was ordered by Tri-Star, via Mike Karpa. No other solutions were offered by Tri-Star at that time. At my direction, a decision was made to start the PST project over again, with the assumption that the foregoing errors were too difficult to identify and solve.

38. On or about January 30, 1997, Kistler Morse advised that they believed that the problems encountered to date resulted from signal line noise. Mike Karpa agreed to test the signal lines at the PST site with PST employee John Martz.

39. On or about February 12, 1997, Tri-Star installed a VS/2 unit. Some improvement was noted in performance of the system, but disruptions of data flow from the on-site remote telemetry unit (RTU) were still encountered and reported to me.

40. On or about February 24, 1997, the same problems with the new hardware (wrong time, disconnects, corrupted data) were reported to me. Mike Karpa had one of the technicians get involved with Tri-Star to resolve these recurring problems.

41. On or about February 28, 1997, Kistler went on site for a joint inspection with Tri-Star, and found a faulty RS-232 adaptor for the VS/2. Kistler advised that replacement of this component should correct current problems reported to me.

42. On or about April 1, 1997, as a result of the foregoing correction, system performance improved. However, when the computer self-booted it would no longer collect data. This was an issue in the off hours at PST and the J.P. Donmoyer facility, when the system was not manned. I was now advised by Allen Baumbach of Tri-Star that he thought that our problem is Wave Conversion on the Win 11 modem they had installed. He suggested to replace modem to correct the foregoing problem.

43. On or about May 23, 1997, the system performance was still inconsistent in that it worked fine for a period of time, and then for no apparent reason disconnected at the site, with no additional data being transmitted.

44. On or about June 9, 1997, we added a second silo of injection carbon to the PST Steelton RTU. Control screens for the software were programmed at JP Donmoyer Operations Ono, PA. This installation provided us the opportunity to test two silos over the same RTU. This would aid us in evaluating problems still occurring with the original site installation.

45. On or about October 3, 1997, data reads from the second silo of injection carbon were inconsistent. There were high swings in volume displayed on the screens, which were unrealistic. Mike Karpa was asked by me to evaluate the Kistler Monitoring System. At this point I did not have faith that Tri-Star could assist with this due to their past proven inabilities to handle and/or correct issues with the system. I was highly disappointed in their support on this project.

46. On or about October 29, 1997, I was actively working with Kimmel Coal Services to add Nucor Inc., of Darlington, South Carolina, to my experimental test project. This additional, very remote site would help us to verify if issues encountered at PST Steelton were isolated or an issue with the system as a whole.

47. In and around November 1997, I visited the Nucor Inc., Darlington, South Carolina facility and discussed the system. A Tour of the site and silos revealed that existing monitoring equipment would have to be upgraded prior to introducing my invention. Nucor agreed to upgrade their existing silo monitoring level equipment and J.P. Donmoyer would cover all of the project costs to install my invention.

48. On or about December 1, 1997, I received a bid quote from Walt Maidl of Tri-Star. I felt the cost that Tri-Star presented was way out of line. Their response indicated a reluctance to participate in the future on the project. Discussed the issue with Mike Karpa. He had some alternative contact suggestions. I also decided at this time to contact Steve Lowry of Steve Lowry Associates, to determine his interest as a Project Manager.

49. Attached as Exhibit K is an Affidavit from Steve Lowry verifying his involvement in the reduction to practice of my invention.

50. On or about December 7, 1997, I contacted Steve Lowry regarding engaging him as a project manager and principal engineering consultant to aide in the implementation of my invention at Pennsylvania Steel Technologies, Nucor, South Carolina, and New Jersey Steel locations.

51. On or about January 30, 1998, I met with Steve Lowry to discuss the existing implementation of my invention at the PST project and to review with him the various problems that had been encountered during my attempt to implement a working embodiment of my invention. I also provided Steve with examples of the software (Lookout) and manual for his review.

52. During the months of February and March, 1998, Steve Lowry reviewed the existing implementation of my invention, the hardware and software associated with that implementation, and the various problems related to both software and hardware that had occurred at the PST project during the previous twelve months.

53. On or about April 13, 1998, I received a formal written proposal from Steve Lowry for a revised bulk inventory network system according to my invention including various software and hardware upgrades that were proposed by him as solutions to the problems encountered at the PST project.

54. Attached as Exhibit L, is a copy of the engineering report dated April 13, 1998.

55. In and around the month of May, 1998, Steve Lowry became intimately involved with the three experimental installations of my invention at PST, Nucor, and New Jersey Steel. Steve also worked to upgrade the Lookout software, the remote telemetry unit, and the interface between these devices and the detectors and central computer.

56. During the months of June and July 1998, Steve Lowry continued to implement the plan outlined in his April 13, 1998 report. He also worked on enhancing the Lookout programming and upgrading the remote telemetry unit for the Nucor Site.

57. During the months of August and September 1998, Steve installed the updated version of the Lookout software and the redesigned remote telemetry unit at the New Jersey Steel and Nucor installations.

58. Between May 1, 1998 and September, 1998, the implementation of my invention as suggested in Steve Lowry's report was undertaken at the PST project, the Nucor, South Carolina location, and at New Jersey Steel.

59. On September 19, 1998, the implementation of my invention at the Nucor, South Carolina facility fully functioned according to my expectations and in conformance with the anticipated results of implementing my invention as conceived prior to April 22, 1996.

60. In or around November, 1998, the implementation of my invention at the PST facility fully functioned according to my expectations and in conformance with the anticipated results of implementing my invention as conceived prior to April 22, 1996.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that

willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, Section 1001, and that such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

Date: August 8, 2005

David B. Wallace

PH1\1475057.1